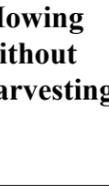
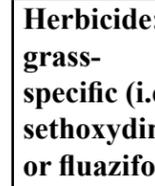


Treatment	Effect	Should use	Could use	Should not use	Comments
 Burning	<ul style="list-style-type: none"> Removes biomass and litter; might kill seeds on soil Reduces available N over multiple burns (N volatilized) Seed bank released, both desirable/undesirable species Stimulates dormant buds of RCG, rhizomes re-sprout Can jumpstart growing season by warming soil 	<ul style="list-style-type: none"> To reduce RCG in late spring after RCG is active but before natives break dormancy To force RCG to re-sprout and use reserves from rhizomes Use in combination with other practices 	<ul style="list-style-type: none"> To remove thatch prior to a planting/seeding of desirable natives To remove thatch and prompt early spring sprouting of RCG, which can then be treated with glyphosate or sethoxydim 	<ul style="list-style-type: none"> In fall to control RCG in short term, because RCG benefits from high light conditions that follow fire In early spring in mixed vegetation sites, because RCG growth will be encouraged by increased light, unless you plan to combine with another treatment On organic sites when very dry 	<ul style="list-style-type: none"> Jumpstart occurs if burn done in fall or spring No research on critical density of RCG that can be controlled by burning alone Early burns will stimulate RCG; timing and frequency critical
 Excavation	<ul style="list-style-type: none"> Removes rhizomes and seed bank Removes sediment and nutrients Alters hydrology 	<ul style="list-style-type: none"> Where material can be pushed to fill drainage ditches or where it can be moved off site; where deeper water is desired During winter, to reduce soil compaction During summer when wet sites are dry 	<ul style="list-style-type: none"> To remove alluvium over native wetland soils 	<ul style="list-style-type: none"> If there is no soil disposal site. If compaction is an issue If you don't want a deep-water marsh. If there is a high-quality remnant plant community in area 	<ul style="list-style-type: none"> May cause soil compaction RCG will rapidly re-colonize disposed soil; use caution when selecting a disposal site Additional treatments will be necessary on drier sites Seed with natives afterwards, except in the deepest water, or if a rich native seed bank exists May require special permits
 Tree/shrub planting	<ul style="list-style-type: none"> When woody species overtop RCG, shade slows its growth May change plant community Adds structure to habitat 	<ul style="list-style-type: none"> Where herbaceous vegetation cannot gain a competitive advantage 	<ul style="list-style-type: none"> In an area where landscape is receiving RCG seed inputs Where inflows can't be diverted To connect existing woody patches 	<ul style="list-style-type: none"> Where management goal is to maintain grassland habitat 	<ul style="list-style-type: none"> Need to apply herbicide/mulch around newly planted trees/shrubs Conifers may be the most effective at shading RCG Need to control RCG for 3-5 years to allow trees to establish Shelter tubes may be cost-effective
 Grazing	<ul style="list-style-type: none"> Reduces biomass in spring Causes disturbance Allows seedling establishment (good/bad) Adds nutrients to system 	<ul style="list-style-type: none"> In highly disturbed sites to reduce RCG biomass In fall, after a prescribed burn (RCG regrowth more palatable) 	<ul style="list-style-type: none"> To reduce biomass and height before herbicide treatment To reduce seed production Lightly, to sustain diversity 	<ul style="list-style-type: none"> During wet conditions in spring where trampling and compaction can damage a site On high quality sites 	<ul style="list-style-type: none"> Once started, cannot stop, unless you switch to another treatment Not an effective practice alone Use proper stocking rates to prevent overgrazing of desirable species
 Mowing & harvesting (hay)	<ul style="list-style-type: none"> Removes biomass and nutrients that are accumulated in biomass Directly damages RCG Similar effects to fire (promotes seed establishment, stimulates plant growth by increasing light) 	<ul style="list-style-type: none"> To reduce biomass before herbicide treatment To remove P from site Before seed heads appear (boot to late boot)* To prepare for R_x fire To prepare for herbicide application 	<ul style="list-style-type: none"> As a substitute for fire (though not quite the same) To change fire behavior 	<ul style="list-style-type: none"> Where tussocks and microtopography will be damaged If grassland bird habitat will be impacted. When site is too wet for equipment 	<ul style="list-style-type: none"> On high quality sites, avoid use during growing season Mow before RCG seed heads appear (boot to late boot stage)*
 Mowing without harvesting	<ul style="list-style-type: none"> Reduces plant height Increases light—promotes competition Depletes rhizome reserves Creates dry biomass for fire 	<ul style="list-style-type: none"> To prepare for R_x fire To prepare for herbicide application To stress RCG When harvesting equipment is not available 	<ul style="list-style-type: none"> To change fire behavior 	<ul style="list-style-type: none"> Where tussocks and microtopography will be damaged If grassland bird habitat will be impacted. When site is too wet for equipment 	<ul style="list-style-type: none"> Mow before RCG seed heads appear (boot to late boot stage) Could impede establishment of natives, due to remaining mat of vegetation
 Herbicide: glyphosate	<ul style="list-style-type: none"> Reduces plant height Increases light—promotes competition Depletes rhizome reserves Creates dry biomass for fire 	<ul style="list-style-type: none"> On sites without native plants prior to reseeding. To dry out RCG in order to burn In late summer for maximum translocation to roots 	<ul style="list-style-type: none"> For treating clones within areas of desirable natives As an initial herbicide treatment on monotypic stands of RCG Where RCG height precludes use of other herbicides In early spring or late fall, when RCG is live, but other plants dormant On wet sites, use Rodeo® 	<ul style="list-style-type: none"> On sites with desirable native plants actively growing Where desirable plants are intermixed with RCG Soon after mowing/burning When amphibians are on site (Roundup® surfactant has negative effects) 	<ul style="list-style-type: none"> Should be part of a continued control strategy, where natives would be later introduced Multiple treatments may be necessary May need a permit for application on wetlands Translocation ineffective when temperature is >70° F Other herbicide/mowing treatments may influence herbicide effectiveness Add ammonium sulfate to tank mix if water is hard
 Herbicide: grass-specific (i.e. sethoxydim or fluazifop)	<ul style="list-style-type: none"> Suppresses growth of most perennial grasses Releases native plant community (except for grasses) 	<ul style="list-style-type: none"> On sites with desirable, native, non-grass species When active growth resumes after burning/mowing, when RCG is 6-12" tall 	<ul style="list-style-type: none"> Following other herbicide treatments to control residual or re-emerging RCG 	<ul style="list-style-type: none"> To obtain immediate eradication If standing water is present On high quality sites with desirable grasses When RCG is >12" tall 	<ul style="list-style-type: none"> Apply with surfactant or crop oil Apply when temperature >70° F (better rhizome translocation) > one treatment required Effectiveness of sethoxydim is reduced by UV light Add a water conditioner or acidifier if water is hard
 Tillage	<ul style="list-style-type: none"> Exposes rhizomes to light; might activate dormant buds Slices rhizomes Can contribute to erosion 	<ul style="list-style-type: none"> To prepare site for herbicide by making more rhizome buds responsive to chemical control On monotypic, damaged sites to prepare for crop production 	<ul style="list-style-type: none"> To prepare a seedbed To reduce RCG seed bank 	<ul style="list-style-type: none"> Where microtopography needs to be maintained. Where desirable natives are mixed with RCG On wet sites, where soil could become compacted, or equipment can get stuck/damaged Where offsite impacts are possible (sedimentation/erosion) 	<ul style="list-style-type: none"> Need to combine with another treatment, or repeat tillage Depth should be 4-6" to target RCG rhizomes Spring or early summer tilling preferred Could till every four weeks during growing season, depending on management goal
 Altering hydrology	<ul style="list-style-type: none"> Prolong/increase water levels Prevents RCG seed germination Kills RCG rhizomes 	<ul style="list-style-type: none"> If new water depth is > 12" If high water can be maintained through the growing season. 	<ul style="list-style-type: none"> To promote the growth of emergent plants such as native cattail, burr-reed and bulrush species 	<ul style="list-style-type: none"> If new water depth is < 12" or site seasonally dries out If other invasives are nearby (<i>Typha x glauca</i>, <i>Phragmites</i>) 	<ul style="list-style-type: none"> Effects vary by site High water can promote growth of other invasives (<i>Typha x glauca</i>, <i>Phragmites</i>) if present in the area Can be combined with tillage May require special permits
 Mulching / solarization with plastic or fabric	<ul style="list-style-type: none"> Non-selective treatment; shades out all plants Kills adult plants Kills RCG rhizomes 	<ul style="list-style-type: none"> For small, isolated RCG clones For 1-3 consecutive years On patches with high edge:area ratio, to facilitate recolonization by soil fauna 	<ul style="list-style-type: none"> To facilitate seeding or planting of natives 	<ul style="list-style-type: none"> Where desirable natives are mixed with RCG For abatement on large sites If native species are present In areas with microtopography 	<ul style="list-style-type: none"> Resurgence from seedbank may occur when tarping removed May have adverse effects on soil microorganisms May alter soil chemistry Not always an effective treatment

A reference table for landowners and restoration professionals

Reed Canarygrass Control Practices: Effects and Management Recommendations

A few things to remember...

Although the recommended reed canarygrass control practices are based on advice from experienced practitioners and researchers, they have not been fully tested in a field setting.

Following recommendations from this table does not guarantee control and/or eradication of reed canarygrass. Site-specific conditions and timing variables are likely to influence results.

When applying chemical herbicides, be sure to follow all safety precautions and label recommendations. Over-application or unintended use of pesticides can potentially harm the environment and pose a safety risk to the user.

Controlling reed canarygrass may result in other invasive or undesirable species attempting to colonize the site after suppression of the reed canarygrass. Follow-up monitoring or control of other invasives may be needed.

When tractors, mowers, or bulldozers are used in reed canarygrass control, be aware of the potential to pass on seeds, rhizomes or other plant parts to new locations unless equipment is cleaned after use.

Federal, state and local permits may be required when performing restoration work in wetlands or along waterways. Contact your local DNR office or county zoning administrator before initiating reed canarygrass control work.

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This publication is part of an ongoing effort to synthesize and develop effective means of controlling invasive reed canary grass in natural areas. For more information, contact:

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